

Notice of Allowability

Application No.

10/802,159

Examiner

Jungwon Chang

Applicant(s)

POPOVICH ET AL.

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2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 12/16/05, and interview dated 2/19/06.
2. ☒ The allowed claim(s) is/are 1-8, 11-13, 18, 19 and 21, now renumbered as 1-14.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 2/19/06.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

CCB Jungwon
Jungwon Chang

EXAMINER'S AMENDMENT

1. An extension of time under 37 CFR 1.136(a) is required to place this application in condition for allowance. During a telephone conversation conducted on 2/19/06, the examiner requested an extension of time for 1 MONTH.

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Valerie Davis, Reg. No. 50,203 on February 19, 2006.

3. The application has been amended as follows:

In Specification

Page 1, insert --- This application claims the benefit of U.S. Provisional entitled "REGIONAL REGISTRATION FOR A MOBILE IP ENABLED SYSTEM", Serial No. 60/525,544, filed Nov. 26, 2003.

In Claims

1. (currently amended) A registration method for use in a system having a hierarchical structure comprising a mobile node, at least one foreign agent, at least one gateway foreign agent and a home agent, said method comprising the steps of:

intercepting a registration request from a mobile node to its home agent, said registration request including a first care-of address for said mobile node;

determining whether there is an existing entry in a visitor list for said mobile node;

if said entry exists, updating said entry,

if no entry exists, creating an entry in said list for the mobile node, adding a second care of address as an extension to said registration request, and sending said registration request with said address extension to said home agent;

sending a registration reply to said mobile node; and

maintaining in a gateway foreign agent a first and a second lifetime value,
wherein said first lifetime value corresponds to the lifetime of a registration by said mobile node with its home agent, and said second lifetime value corresponds to the lifetime of a registration by said mobile node with a gateway foreign agent.

2. (original) The method of Claim 1, wherein said first care-of address is the IP address of a foreign agent, which is included in a care-of address entry of said registration request, and said second care-of address is the IP address of a gateway foreign agent.

3. (original) The method of Claim 2, wherein said foreign agent selects said gateway

foreign agent, and relays said registration request from said mobile node to said gateway foreign agent.

4. (original) The method of Claim 1, wherein said registration reply is sent directly to said mobile node from a gateway foreign agent if said entry exists, and said reply is received from said home agent and relayed from the home agent to the mobile node via a gateway foreign agent if no entry exists.

5. (original) The method of Claim 4 further comprising the steps of determining whether the reply from the home agent indicates that said mobile node has successfully registered with said home agent and if so storing a lifetime value included in said registration reply, otherwise deleting the entry in said visitor list for said mobile node.

6. (original) The method of Claim 4, wherein if an entry exists, said method further comprising the steps of determining whether a lifetime for said registration request has expired and if so adding said second care-of address as an extension to said registration request, and sending said registration request with said address extension to said home agent.

7. (original) The method of Claim 1, wherein updating said entry comprises recording said first care-of address.

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8. (original) The method of Claim 7, wherein said entry is updated as a function of said mobile node roaming from a first foreign agent to a second foreign agent, wherein said first care of address is the IP address of said second foreign agent.

9. (cancelled)

10. (cancelled)

11. (currently amended) The method of ~~Claim 10~~ Claim 1, wherein said first lifetime value is the same as said second lifetime value.

12. (currently amended) The method of ~~Claim 10~~ Claim 1, wherein said first lifetime value is different from said second lifetime value.

13. (original) The method of Claim 1, wherein said first care-of address is a co-located care-of address, which is included in a care-of address entry of said registration request, and said second care-of address is the IP address of a gateway foreign agent.

14. (canceled)

15. (canceled)

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16. (canceled)

17. (canceled)

18. (previously presented) The method of Claim 1, further comprising removing said second care-of address from said registration entry if said second care-of address is unreachable.

19. (original) The method of Claim 18, further comprising:

receiving a subsequent registration message from said mobile node including a valid care-of address added as an extension to said subsequent registration request; and
recording said valid care-of address for use in tunneling at least one datagram to said mobile node.

20. (canceled)

21. (currently amended) A gateway foreign agent included in a system having a hierarchical structure comprising a mobile node, at least one foreign agent, at least one said gateway foreign agent and a home agent, said gateway foreign agent being configured for:

intercepting a registration request from a mobile node to its home agent, said registration request including a first care-of address for said mobile node;

determining whether there is an existing entry in a visitor list for said mobile node;

if said entry exists, updating said entry;

if no entry exists, creating an entry in said list for the mobile node, adding a second care of address as an extension to said registration request, and sending said registration request with said address extension to said home agent;

sending a registration reply to said mobile node; and

maintaining in a gateway foreign agent a first and a second lifetime value, wherein said first lifetime value corresponds to the lifetime of a registration by said mobile node with its home agent, and said second lifetime value corresponds to the lifetime of a registration by said mobile node with a gateway foreign agent.

22. (canceled)

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jungwon Chang whose telephone number is 571-272-3960. The examiner can normally be reached on 9:30-6:00 (Monday-Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Jungwon Chang'.

Jungwon Chang

March 7, 2006